

APPENDIX C

LNAPL and COC Mass Estimation for the Off-Site Source Area

APPENDIX C TABLE OF CONTENTS

C-1.0	INTRODUCTION.....	C-1
C-2.0	CORRELATING LIF RESPONSE TO SOIL PETROLEUM HYDROCARBON CONCENTRATIONS.....	C-1
C-3.0	VOLUME AND MASS OF RESIDUAL LNAPL-AFFECTED SOIL	C-3
C-4.0	MASS OF BENZENE- AND MTBE IN LNAPL-AFFECTED SOIL	C-5
C-5.0	REFERENCES.....	C-6

FIGURES

- C-1 Average LIF Reading (% of Standard) vs. Soil Concentration of TPH (C₆-C₄₀)
- C-2 Sub Areas for Mass Estimate

TABLES

- C-1 Summary of CPT/LIF Data and Corresponding Analytical Data
- C-2 Correlation Factor Analysis
- C-3 Mass and Volume Estimate
- C-4 Mass and Volume Estimate for Numerical Simulation
- C-5 Mass Fraction Analysis

C-1.0 INTRODUCTION

Appendix C describes the methodology and procedures employed for calculating the mass of residual light nonaqueous phase liquid (LNAPL), benzene, and methyl tertiary-butyl ether (MTBE) in the northern parking area of Qualcomm Stadium and beneath San Diego Mission Road (the off-site area).

The occurrence of LNAPL in the subsurface has been investigated through the use of cone penetrometer testing coupled with laser induced fluorescence (CPT/LIF) measurements. Three CPT/LIF investigations have been conducted in the Mission Valley Terminal and south of San Diego Mission Road in the north parking area of Qualcomm Stadium. For the purpose of source area characterization, Aqui-Ver and GeoSyntec (2001) conducted a CPT/LIF investigation that consisted of 127 locations from the Terminal manifold area to the northern parking area of Qualcomm Stadium, 39 of which were conducted in the off-site area (Aqui-Ver, 2001). LFR conducted a second CPT/LIF investigation that consisted of 16 locations in the off-site area for the purpose of siting an in-situ air sparging and soil-vapor extraction (IAS/SVE) system (LFR 2003a). LFR also conducted a third CPT/LIF investigation that consisted of 40 locations selected to further characterize lithology and residual LNAPL distribution in both the on-site and off-site areas. Twenty-eight of these locations were in the off-site area to refine the mapped extent and relative distribution of residual LNAPL (LFR 2003b). Table C-1 lists off-site CPT/LIF locations.

C-2.0 CORRELATING LIF RESPONSE TO SOIL PETROLEUM HYDROCARBON CONCENTRATIONS

Data from the CPT/LIF evaluations were compiled and reviewed to establish which locations had historical confirmation soil borings or other soil borings and/or well construction activities within approximately 20 feet of each respective CPT/LIF location. Boring logs from well construction activities occurring within 20 feet of a CPT/LIF location were reviewed to establish if soil analytical data were obtained during the well construction. Soil analytical data from soil borings and well construction activities within 20 feet of a CPT/LIF location were compiled and grouped together with data from the closest respective CPT/LIF location. LIF response data were compared to nearby analytical soil petroleum hydrocarbon concentration data to investigate whether a correlation exists. The CPT/LIF data and corresponding soil analytical data are presented in Table C-1.

The data were reviewed to graphically estimate a correlation between LIF response and analytical soil petroleum hydrocarbon concentrations. Survey data for each of the CPT/LIF locations, soil borings, and well installations were used to calculate separation distances between CPT/LIF locations and their corresponding soil analytical data. Distances exceeding 10 feet, with the exception of CPT-81 and soil boring Q-5, were not used for the correlation, as the heterogeneous nature of the fluvial soils at the Site

provides for distinct, significant lithologic variations between adjacent locations. Locations for which over two years had lapsed between CPT/LIF measurements and soil sampling activities were not used in the correlation to account for petroleum hydrocarbon depletion that may have occurred between measurement events. In addition, locations where SVE was performed in the time period between CPT/LIF measurements and soil sampling activities were not used in the correlation.

Petroleum hydrocarbon concentrations detected in soil samples and LIF responses observed in adjacent borings is shown in Table C-1 and on Figure C-1. The concentration of petroleum hydrocarbons is the sum of the C₆-C₁₂ and C₁₃-C₄₀ fractions as reported using Modified EPA Method 8015. The LIF response shown is the average LIF response detected from approximately 0.25 feet above the top of the soil sample depth interval to 0.25 feet below the bottom of the soil sample depth interval. This range is intended to account for the uncertainty in soil sample or LIF depths. As shown in Table C-1, surveyed ground surface elevations were used to correlate the depths of the soil samples to their adjacent, respective CPT/LIF location.

A regression analysis method was used to attempt to find a best-fit curve correlating petroleum hydrocarbon concentrations detected in soil samples and LIF responses. Results indicated a poor correlation when comparing measurements from locations that are separated by up to 10 feet horizontally and from approximately the same depth interval. The analysis was further refined by excluding CPT/LIF locations separated by distances greater than 4 feet from a soil sampling location. Again, a poor correlation is indicated. A correlation between LIF response and sampled soil concentration is more likely when a stable LIF response is observed over a depth interval of 1 foot or more. When LIF response varies over short vertical distances, as is the case for many of the LIF profiles obtained at this site, the LIF does not correlate well with sampled soil concentration (personal communication, Gerry Boehm, Fugro Geosciences, Inc.). The heterogeneous nature of the fluvial soils at the Site adds to the difficulty of obtaining a soil sample that has a concentration of petroleum hydrocarbons that would correlate well with an observed LIF response at an adjacent location. LNAPL retention in the soil is strongly affected by grain size distribution, and a small change in this parameter between a LIF location and an adjacent soil sample location may significantly affect the observed correlation. Additional complications arise because LNAPL has existed in the subsurface for several years, and remedial activities combined with fluctuating water table levels and LNAPL weathering have contributed to the heterogeneity of the remaining residual LNAPL. Because of the poor correlation over the full range of observed soil concentrations and LIF responses, regression methods were rejected for use in developing a site-specific correlation factor relating LIF response to soil concentration.

An alternative method was used to evaluate the correlation between Maximum LIF response and theoretical maximum LNAPL concentration. Maximum LIF response data and adjacent soil property data for determination of a theoretical maximum LNAPL concentration are available at six locations given in Table C-2. The maximum theoretical LNAPL concentration in soil was calculated assuming that LNAPL would fill all available pore space. Available pore space for LNAPL is assumed to equal porosity multiplied by one minus the residual water saturation. Residual water saturation is

assumed to be equal to the saturation at the highest capillary pressure in a capillary pressure/saturation test. Finally, LNAPL content is converted to soil concentration, assuming a NAPL density of 0.73, and using the sample-specific soil bulk density. This gives the following formulation for theoretical maximum LNAPL concentration in soil:

$$C_{\max} = \frac{(1 - \varsigma_{wr}) \cdot \phi \cdot \rho_{NAPL}}{\rho_b}$$

ς_{wr} = residual water saturation

ϕ = porosity

ρ_{NAPL} = LNAPL density

ρ_b = Soil dry bulk density

The soil-concentration-to-LIF-response correlation factor is given by fitting these data and assuming the correlation line goes through the origin (i.e. no NAPL in soil correlates to no LIF response). The resulting value is 220 with a standard error of 29. Data and calculated values used to estimate the correlation factor are shown in Table C-2.

C-3.0 VOLUME AND MASS OF RESIDUAL LNAPL-AFFECTED SOIL

Utilizing the estimated distribution of residual LNAPL as indicated by recent and historical CPT/LIF investigations, an analysis was conducted to estimate the vertical distribution of LNAPL-impacted soil so that the total volume of impacted soil and ultimately the mass of impacted soil and LNAPL could be estimated. Additionally, the volume of impacted soil and LNAPL in different soil types and ultimately the total mass of impacted soil and LNAPL in different soil types could be estimated.

The horizontal extent of residual LNAPL in the northern parking area of Qualcomm Stadium and beneath San Diego Mission Road was first divided into 16 semi-regular sub-areas selected to normalize CPT/LIF data density. Each area was selected based on achieving a constructive distribution of CPT/LIF locations such that subsets of dense data did not exist in one portion of a sub-area, thus causing calculated area averages (i.e., LIF response thickness, depth to groundwater, etc.) to be skewed towards values more indicative of the portion of the sub-area with the more dense data as opposed to the sub-area as a whole. The 16 areas are displayed on Figure C-2.

The soils in and vertically adjacent to the impacted area were divided into three predominant soil types: silty sands found predominantly in the vadose zone, underlain by clayey silts, underlain by well-graded sand found predominantly in the saturated zone. The CPT data for each of the CPT/LIF locations in the off-site area where LIF response was observed were evaluated to estimate where each of the three lithologic zones at the Site existed relative to ground surface. Groundwater elevation data from groundwater monitoring events that occurred in November 2003 (LFR, 2004) were also evaluated such

that groundwater elevations at each CPT/LIF location could be estimated. The depth interval over which soils are impacted by residual LNAPL was estimated from the depth interval over which LIF response was observed (LFR, 2003b). The results were used to subdivide each CPT/LIF location in the off-site area in which LIF response was observed into six depth intervals within the impacted soil: impacted vadose zone well-graded sands, impacted vadose zone silty sands, impacted vadose zone clayey silts, impacted saturated zone well-graded sands, impacted saturated zone silty sands, and impacted saturated zone clayey silts. The results are displayed in Table C-3.

The CPT/LIF locations within each of the 16 sub-areas shown on Figure C-2 were used to calculate the average depth interval for each of the 6 lithologic/hydrogeologic zones in each sub-area. Utilizing these average depth intervals and the area of each of the 16 sub-areas, the volume of affected soil for each of the 6 lithologic/hydrogeologic divisions was calculated. The results indicate that in the off-site area there are 667,000 cubic feet of residual LNAPL-impacted soil located in unsaturated silty sands, 206,000 cubic feet in unsaturated clayey silts, 91,000 cubic feet in unsaturated well-graded sands, 24,100 cubic feet in saturated clayey silts, and 54,200 cubic feet in saturated well-graded sands. Using average soil densities for each soil type calculated in Appendix B allows the soil volumes to be converted to impacted soil masses. The results are displayed in Table C-3.

The average LIF reading for each of the six lithologic/hydrogeologic depth intervals was then calculated for each CPT/LIF point. The averages from each of the CPT/LIF locations within each of the 16 sub-areas were used to calculate the average LIF response in each of the 6 lithologic/hydrogeologic depth intervals within each of the 16 sub-areas. These values were converted to soil petroleum hydrocarbon concentrations using the previously estimated correlation, thus allowing residual LNAPL mass for each lithologic/hydrogeologic zone in each sub-area to be calculated by multiplying the soil mass within each volume by its respective estimated average soil petroleum hydrocarbon concentration. The results indicate that in the off-site area there are between 415,779 and 524,763 pounds of residual LNAPL-impacted soil located in unsaturated silty sands, between 171,171 and 216,039 pounds in unsaturated clayey silts, between 14,844 and 18,735 pounds in unsaturated well-graded sands, between 1,790 and 2,259 pounds in saturated clayey silts, and between 26,931 and 33,990 pounds in saturated well-graded sands. This indicates a total of between 630,516 and 795,786 pounds of residual LNAPL. The reported range is based on the average correlation between LIF response and soil petroleum hydrocarbon concentration and the 97.5% upper confidence limit (UCL) (approximately two times the standard error above the best-fit correlation coefficient) for the same correlation.

Further delineations were made for the purpose of supporting analytical simulations of LNAPL dissolution using the LNAST code (presented in Appendix D). The 16 sub-volumes were grouped into the following 3 sub-categories: all impacted soil is above the water table, the water table is located in well-graded sand, and the water table is located in clayey silt. Where the water table is located in the clayey silt, it is assumed that all the well-graded sand is below the water table. The results are summarized in Table C-4.

The LIF Response Isopach map produced by LFR during previous CPT/LIF investigations (LFR, 2003b) was used to check the volume estimate as estimated by the method described above. The LIF Response Isopach map graphically displays contours of interpreted thickness of LNAPL-affected soil based on LIF response data for the northern parking area of Qualcomm Stadium and beneath San Diego Mission Road. Utilizing AutoCAD, the area for each of these isopachs was calculated and multiplied by their respective isopach thickness, resulting in a calculated volume of impacted soil. The sum of these impacted volumes was 1,230,000 cubic feet, which compares favorably with the aforementioned volume estimate of 1,040,00 cubic feet calculated as the sum of the impacted soil volume in each of the 16 sub-areas.

LNAPL has been historically observed in groundwater monitoring well R-11, which is outside of the current interpreted extent of residual LNAPL. LNAPL in R-11 was observed to be 0.70 feet thick in May 2001, 0.15 feet thick in August 2001, and 0.01 feet thick from November 2001 to May 2002. Because neighboring LIF data suggest little or no residual LNAPL, it is assumed that the LNAPL associated with the observations in R-11 does not represent a significant additional amount with respect to the volume and mass calculations presented above.

C-4.0 MASS OF BENZENE- AND MTBE IN LNAPL-AFFECTED SOIL

Soil concentration data compiled for the purpose of correlating LIF responses to soil petroleum hydrocarbon concentrations were also used to estimate the mass fractions of benzene and MTBE in the residual LNAPL. Only soil data from the off-site area were used for this evaluation. Soil samples indicating that the sum of the C₆-C₁₂ and C₁₃-C₄₀ fractions were less than 500 milligrams per kilogram (mg/kg) were also excluded as potentially representing soil containing little or no residual LNAPL. The resulting data were evaluated to calculate the average mass fraction of benzene and MTBE, relative to the mass of C₆-C₄₀ hydrocarbons, on a per-soil-sample basis. From the results of the individual soil sample calculations, mean values for benzene and MTBE mass fractions were calculated along with 97.5% UCL values. The 97.5% UCL on the mean is calculated as:

$$x_{97.5\%UCL} \cong \bar{x} + \frac{2\sigma}{\sqrt{n}}$$

\bar{x} = arithmetic mean value

σ = standard deviation of the normal data distribution

n = number of samples

The use of the arithmetic mean and the above equation to describe the likely range of constituent mass fractions implies the assumption that the data are normally distributed. However, 67% of the benzene data and 86% of the MTBE data are below the detection limit, so it is not possible to accurately test the datasets for non-normality. Further, the assumption of a value of one-half the detection limit for these data may affect the

calculated mean and UCL non-conservatively. The results indicate a mean to 97.5% UCL mass fraction range of benzene in the off-site residual LNAPL of 0.008 to 0.010. The results indicate a mean to 97.5% UCL mass fraction range of MTBE in the off-site residual LNAPL of 0.002 to 0.003. Results are summarized in Table C-5.

The mass fractions were used to calculate the mass of benzene and MTBE in the northern parking area of Qualcomm Stadium and beneath San Diego Mission Road based on the previously described mass estimate. The results indicate that of the mean estimate of 631,000 pounds of residual LNAPL in the off-site area, 4,930 pounds are benzene and 1,330 pounds are MTBE; and of the 97.5% UCL estimate of 796,000 pounds of residual LNAPL in the off-site area, 7,980 pounds are benzene and 2,400 pounds are MTBE. The 97.5% UCL estimates use the 97.5% UCL total mass estimate compounded by the 97.5% UCL mass fraction estimate.

C-5.0 REFERENCES

- Aqui-Ver, Inc. and GeoSyntec Consultants, Inc. 2001. Site Investigation Report, Mission Valley Terminal, San Diego, California. July 31.
- LFR. 2003a. Remediation System Technical Evaluation Report, Mission Valley Terminal, San Diego, California. July 8.
- LFR. 2003b. Additional LNAPL Distribution and Lithologic Characterization, Mission Valley Terminal, San Diego, California. December 12.
- LFR. 2004. Quarterly Groundwater Monitoring Report, Fourth Quarter of 2003, Mission Valley Terminal, San Diego, California. January 30.

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	EPA 8015M mg/kg	EPA 8015M mg/kg	TPHg (C6-C12) EPA 8015M mg/kg	TPHd (C13 - C22) EPA 8015M mg/kg	EFH (C13 - C40) EPA 8015M mg/kg	Petroleum Hydrocarbons (C6 - C40) EPA 8260B mg/kg	Benzene EPA 8260B mg/kg	Methyl-tert-butyl Ether (MTBE) EPA 8260B mg/kg	Notes
CPT-01	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.45	NA								--			
CPT-02	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.14	NA								--			
CPT-03	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.28	NA								--			
CPT-04	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.18	NA								--			
CPT-05	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.58	NA								--			
CPT-06	04/18/01	On-Site (Upper Terminal Road)	0.66	1.00	13.50	68.25	11.5-12.0	R-49-11.5'	09/24/03	1.5	10	12	13.5	<0.002	<0.005			
"	"	"	"	1.00	38.83	"	14.0-14.5	R-49-14'	09/02/03	320	210	210	530	<0.1	<0.25			
"	"	"	"	1.00	NA	"	17.5-18.0	R-49-17.5'	09/24/03	<1	<5	<5	--	0.32	<0.05			
"	"	"	"	1.00	6.77	"	18.0-18.5	R-49-18'	09/24/03	4.3	<5	<5	4.3	0.038	0.028			
"	"	"	9.85	NA	NA	"	10.25-10.5	B-135-10.25-10.5	07/09/01	<10	NA	<10	--	<0.050	<0.010			
"	"	"	"	NA	NA	"	10.75-11.0	B-135-10.75-11.0	07/09/01	<10	NA	<10	--	<0.050	<0.010			
"	"	"	"	NA	NA	"	11.25-11.5	B-135-11.25-11.5	07/09/01	<10	NA	<10	--	<0.050	<0.010			
"	"	"	"	0.75	4.47	"	12.0-12.25	B-135-12.0-12.25	07/09/01	<10	NA	1,200	1200	<0.050	<0.010			
"	"	"	"	0.75	6.74	"	12.5-12.75	B-135-12.5-12.75	07/09/01	1,500	NA	470	1970	<10	<2.0			
"	"	"	"	0.75	9.15	"	13.25-13.5	B-135-13.25-13.5	07/09/01	120	NA	1,900	2020	<2.0	<0.40			
"	"	"	"	0.75	6.17	"	16.75-17.0	B-135-16.75-17.0	07/09/01	<10	NA	12	12	<0.050	0.035			
"	"	"	"	0.75	NA	"	17.75-18.0	B-135-17.75-18.0	07/09/01	<10	NA	<10	--	0.25	0.74			
"	"	"	"	0.75	NA	"	18.25-18.5	B-135-18.25-18.5	07/09/01	<10	NA	<10	--	0.27	0.58			
CPT-07	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.73	NA							--				
CPT-08	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.33	NA							--				
CPT-09	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.11	NA							--				
CPT-10	04/18/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.74	NA							--				
CPT-11	04/18/01	On-Site (Upper Terminal Road)	4.48	1.00	14.28	67.74	8.0-8.5	R-51-8.0'	09/25/03	2,300	170	170	2470	5.6	1.6			
"	"	"	"	1.00	27.29	"	10.0-10.5	R-51-10.0'	09/25/03	1,100	38	39	1139	5.9	1.8			
"	"	"	"	1.00	4.31	"	12.0-12.5	R-51-12.0'	09/25/03	460	27	29	489	5.1	<1			
"	"	"	"	NA	NA	"	14.0-14.5	R-51-14.0'	09/25/03	540	43	48	588	1.9	<0.5			
"	"	"	"	NA	NA	"	16.5-17.0	R-51-16.5'	09/25/03	<1	<5	<5	--	<0.002	<0.005			
CPT-12	04/19/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.36	NA							--				
CPT-13	04/19/01	On-Site (Upper Terminal Road)	NA	NA	NA	70.97	NA							--				
CPT-14	04/19/01	On-Site (Upper Terminal Road)	NA	NA	NA	71.82	NA							--				
CPT-15	04/19/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.44	NA							--				
CPT-16	04/19/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.42	4.5-5.0	R-02_6/10/92_(4.5-5)	06/10/92	0	NA	NA	--	0	NA	Sampling point too far from CPT point		
"	"	"	NA	NA	NA	"	8.5-9.0	R-02_6/10/92_(8.5-9)	06/10/92	0	NA	NA	--	0	NA	Sampling point too far from CPT point		
CPT-17	04/19/01	On-Site (Upper Terminal Road)	15.90	NA	NA	68.63	6.0-6.5	R-52-6.0'	09/29/03	2.2	<5	<5	2.2	0.033	0.12	Sampling point too far from CPT point		
"	"	"	NA	NA	NA	"	8.0-8.5	R-52-8.0'	09/29/03	2,000	97	99	2099	10	<2.5	Sampling point too far from CPT point		
"	"	"	"	NA	NA	"	9.5-10.0	R-52-9.5'	09/29/03	1,300	76	77	1377	3.7	<1.2	Sampling point too far from CPT point		
"	"	"	"	NA	NA	"	11.0-11.5	R-52-11.0'	09/29/03	<1	8.2	28	28	<0.002	0.034	Sampling point too far from CPT point		
"	"	"	"	NA	NA	"	13.0-13.5	R-52-13.0'	09/29/03	<1	<5	<5	--	0.28	0.021	Sampling point too far from CPT point		
"	"	"	"	NA	NA	"	15.5-16.0	R-52-15.5'	09/29/03	<1	<15	<15	--	0.043	<0.005	Sampling point too far from CPT point		

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	EPA 8015M mg/kg	EPA 8015M mg/kg	TPHg (C6-C12) EPA 8015M mg/kg	TPHd (C13 - C22) EPA 8015M mg/kg	EFH (C13 - C40) EPA 8015M mg/kg	Petroleum Hydrocarbons (C6 - C40) EPA 8260B mg/kg	Benzene EPA 8260B mg/kg	Methyl-tert-butyl Ether (MTBE) EPA 8260B mg/kg	Notes
CPT-18	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.42	NA							--				
CPT-19	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.07	NA							--				
CPT-20	04/19/01	On-Site (Manifold & SFPP Tank Farm)	4.65	1.00	7.34	72.84	13.0-13.5	R-53-13.0'	09/29/03	78	69	78	156	4.0	<1.2			
"	"	"	"	1.00	NA	"	15.5-16.0	R-53-15.5'	09/29/03	<1	<5	<5	--	0.23	1.4			
"	"	"	9.31	0.75	3.52	"	9.0-9.25	B-131-9.0-9.25	07/06/01	1,000			590	1590	<8.0	2.6		
"	"	"	"	0.75	5.74	"	10.0-10.25	B-131-10.0-10.25	07/06/01	1,200			720	1920	<8.0	3.0		
"	"	"	"	0.75	46.93	"	12.0-12.25	B-131-12.0-12.25	07/06/01	3,500			950	4450	210	33		
CPT-21	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.73	NA							--				
CPT-22	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.41	5.0-5.5	LF-04_10/7/87_(5-5)	10/07/87	0	0	0	0	0	0	NA	Soil samples too shallow relative to LIF	
CPT-23	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.25	5.0-5.5	LF-04_10/7/87_(5-5)	10/07/87	0	0	0	0	0	0	NA	Sampling point too far from CPT point	
CPT-24	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.90	#REF!							--				
CPT-25	04/19/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.03	#REF!							--				
CPT-26	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.28	#REF!							--				
CPT-27	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.09	#REF!							--				
CPT-28	04/20/01	On-Site (Upper Terminal Road)	1.96	NA	NA	69.01	10.5-11.0	R-50-10.5'	09/24/03	220	45	48	268	0.50	<1	Date too old for correlation		
"	"	"	"	NA	NA	"	12.5-13.0	R-50-12.5'	09/24/03	490	75	78	568	0.79	<0.5	Date too old for correlation		
"	"	"	"	NA	NA	"	14.0-14.5	R-50-14.0'	09/24/03	3,700	150	150	3850	15	<2.5	Date too old for correlation		
"	"	"	"	NA	NA	"	16.0-16.5	R-50-16.0'	09/24/03	120	11	13	133	0.37	0.14	Date too old for correlation		
"	"	"	8.99	NA	NA	"	10.25-10.5	B-133-10.25-10.5	07/09/01	360	NA	66	426	<4.0	<0.80	LIF too shallow relative to soil samples		
"	"	"	"	NA	NA	"	10.75-11.0	B-133-10.75-11.0	07/09/01	710	NA	65	775	<8.0	<1.6	LIF too shallow relative to soil samples		
"	"	"	"	NA	NA	"	11.25-11.5	B-133-11.25-11.5	07/09/01	1,500	NA	190	1690	<20	<4.0	LIF too shallow relative to soil samples		
"	"	"	"	NA	NA	"	12.25-12.5	B-133-12.25-12.5	07/09/01	3,300	NA	270	3570	<40	<8.0	LIF too shallow relative to soil samples		
"	"	"	"	NA	NA	"	14.25-14.5	B-133-14.25-14.5	07/09/01	460	NA	31	491	9.1	4.7	LIF too shallow relative to soil samples		
"	"	"	"	NA	NA	"	14.75-15.0	B-133-14.75-15.0	07/09/01	<10	NA	--	< 0.050	0.056	LIF too shallow relative to soil samples			
CPT-29	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.44	5.5-6.0	R-01_6/10/92_(5.5-6)	06/10/92	0	NA	NA	--	0	NA	Sampling point too far from CPT point		
CPT-30	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.53	NA						--					
CPT-31	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.63	NA						--					
CPT-32	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.70	NA						--					
CPT-33	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.86	NA						--					
CPT-34	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	69.00	NA						--					
CPT-35	04/20/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.50	NA						--					
CPT-36	04/23/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	69.43	NA						--					
CPT-37	04/23/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.32	NA						--					
CPT-38	04/23/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.34	NA						--					
CPT-39	04/23/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.47	NA						--					
CPT-40	04/23/01	On-Site (Upper Terminal Road)	NA	NA	NA	68.01	NA						--					
CPT-41	04/23/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.90	NA						--					
CPT-42	04/23/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.87	NA						--					
CPT-43	04/24/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.91	NA						--					

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	EPA 8015M mg/kg	EPA 8015M mg/kg	TPHg (C6-C12) EPA 8015M mg/kg	TPHd (C13 - C22) EPA 8015M mg/kg	EFH (C13 - C40) EPA 8015M mg/kg	Petroleum Hydrocarbons (C6 - C40) EPA 8260B mg/kg	Benzene EPA 8260B mg/kg	Methyl-tert-butyl Ether (MTBE) EPA 8260B mg/kg	Notes	
CPT-44	04/24/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.91	NA								--				
CPT-45	04/24/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.93	NA								--				
CPT-46	04/24/01	On-Site (Upper Terminal Road)	NA	NA	NA	67.87	NA								--				
CPT-47	04/24/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.03	NA								--				
CPT-48	04/24/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.86	NA								--				
CPT-49	04/24/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	69.18	NA								--				
CPT-50	04/24/01	On-Site (Manifold & SFPP Tank Farm)	6.61	0.75	3.26	71.59	9.0-9.25	B-130-9.0-9.25	07/06/01	950					340	1290	<10	<2.0	
"	"	"	"	0.75	NA	"	10.0-10.25	B-130-10.0-10.25	07/06/01	<10				<10	--	<0.050	<0.010		
"	"	"	"	0.75	25.40	"	11.0-11.25	B-130-11.0-11.25	07/06/01	1300				540	1840	<10	2.0		
"	"	"	"	0.75	32.12	"	12.0-12.5	B-130-12.0-12.5	07/06/01	2300				630	2930	<40	13		
"	"	"	"	0.75	9.95	"	13.0-13.25	B-130-13.0-13.25	07/06/01	1700				970	2670	<20	9.2		
"	"	"	"	0.75	0.98	"	14.0-14.25	B-130-14.0-14.25	07/06/01	1100				570	1670	<20	5.6		
CPT-51	04/24/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.39	NA								--				
CPT-52	04/24/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.61	NA								--				
CPT-53	04/24/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.59	NA								--				
CPT-54	04/25/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.72	NA								--				
CPT-55	04/25/01	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.48	NA								--				
CPT-56	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	67.69	NA								--				
CPT-57	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.04	NA								--				
CPT-58	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.46	NA								--				
CPT-59	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.48	NA								--				
CPT-60	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.65	NA								--				
CPT-61	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.54	NA								--				
CPT-62	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.49	NA								--				
CPT-63	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.46	NA								--				
CPT-64	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.45	NA								--				
CPT-65	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.54	NA								--				
CPT-66	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.68	NA								--				
CPT-67	06/15/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.82	NA								--				
CPT-68	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.93	NA								--				
CPT-69	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	66.05	NA								--				
CPT-70	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	66.65	NA								--				
CPT-71	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.52	NA								--				
CPT-72	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.20	NA								--				
CPT-73	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.06	NA								--				
CPT-74	06/18/01	Off-Site (Stadium Parking Lot)	4.52	0.75	3.58	62.02	12.25-12.5	Q-3-12.25-12.5	07/06/01	230					1800	2030	< 2.0	< 0.40	
"	"	"	"	0.75	70.26	"	12.75-13.0	Q-3-12.75-13.0	07/06/01	360					2700	3060	< 4.0	< 0.80	
"	"	"	5.49	NA	NA	"	12.25-12.5	Q-4-12.25-12.5	07/06/01	<10				<10	--	< 0.050	< 0.010		
"	"	"	"	0.75	62.27	"	12.75-13.0	Q-4-12.75-13.0	07/06/01	250					1200	1450	< 2.0	< 0.40	

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	EPA 8015M mg/kg	EPA 8015M mg/kg	TPHg (C6-C12) EPA 8015M mg/kg	TPHd (C13 - C22) EPA 8015M mg/kg	EFH (C13 - C40) EPA 8015M mg/kg	Petroleum Hydrocarbons (C6 - C40) EPA 8260B mg/kg	Benzene EPA 8260B mg/kg	Methyl-tert-butyl Ether (MTBE) EPA 8260B mg/kg	Notes
" " "	" " "	" " "	" " "	0.75	175.69	" " "	13.25-13.5	Q-4-13.25-13.5	07/06/01	11		1400	1411	< 0.10	0.023			
" " "	" " "	" " "	" " "	0.75	155.50	" " "	13.75-14.0	Q-4-13.75-14.0	07/06/01	590		3400	3990	< 8.0	< 1.6			
" " "	" " "	" " "	" " "	0.75	32.32	" " "	14.25-14.5	Q-4-14.25-14.5	07/06/01	23		200	223	< 0.20	< 0.040			
CPT-75	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.03	NA							--				
CPT-76	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.98	NA							--				
CPT-77	06/18/01	Refusal	NA	NA	NA		NA							--				
CPT-78	06/18/01	Refusal	NA	NA	NA		NA							--				
CPT-79	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.86	NA							--				
CPT-80	06/18/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.17	NA							--				
CPT-81	06/18/01	Off-Site (Stadium Parking Lot)	11.08	0.75	0.88	65.51	17.0-17.25	Q-5-17.0-17.25	07/06/01	95		40	135	< 2.0	< 0.40			
" " "	" " "	" " "	" " "	0.75	19.07	" " "	17.5-17.75	Q-5-17.5-17.75	07/06/01	8000		4000	12000	< 100	25			
" " "	" " "	" " "	" " "	0.75	23.28	" " "	18.0-18.25	Q-5-18.0-18.25	07/06/01	1300		520	1820	< 20	< 4.0			
" " "	" " "	" " "	" " "	0.75	145.09	" " "	18.5-18.75	Q-5-18.5-18.75	07/06/01	1600		860	2460	< 40	8.9			
" " "	" " "	" " "	" " "	0.75	221.35	" " "	19.0-19.25	Q-5-19.0-19.25	07/06/01	3400		190	3590	54	21			
" " "	" " "	" " "	" " "	0.75	191.29	" " "	19.5-19.75	Q-5-19.5-19.75	07/06/01	940		46	986	23	9.7			
" " "	" " "	" " "	" " "	0.75	50.41	" " "	20.0-20.25	Q-5-20.0-20.25	07/06/01	1100		180	1280	< 10	7.7			
" " "	" " "	" " "	" " "	0.75	7.89	" " "	20.5-20.75	Q-5-20.5-20.75	07/06/01	6000		4000	10000	< 100	29			
CPT-82	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.85	NA							--				
CPT-83	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	66.38	NA							--				
CPT-84	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	67.44	NA							--				
CPT-85	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	67.13	8.0-8.5	RW-3A-8	11/26/02	0	0	0	0	0.0092	0	Not used due to active SVE in the area		
" " "	" " "	" " "	NA	NA	NA	" " "	25.0-25.5	RW-3A-25	11/26/02	14	30	31	45	2.2	3.6	Not used due to active SVE in the area		
CPT-86	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	66.97	NA							--				
CPT-87	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	66.61	NA							--				
CPT-88	06/19/01	Off-Site (Stadium Parking Lot)	3.39	5.00	125.29	66.23	22.0-22.25	Q-6-22.0-22.25	07/06/01	1200		80	1280	11	5.7			
" " "	" " "	" " "	" " "	" " "	195.54	" " "	22.5-22.75	Q-6-22.5-22.75	07/06/01	710		98	808	< 20	< 4.0			
" " "	" " "	" " "	" " "	" " "	199.81	" " "	23.0-23.25	Q-6-23.0-23.25	07/06/01	110		< 10	110	< 2.0	0.79			
" " "	" " "	" " "	" " "	" " "	NA	" " "	23.5-23.75	Q-6-23.5-23.75	07/06/01	< 40		< 10	--	< 2.0	< 0.40			
" " "	" " "	" " "	" " "	" " "	178.03	" " "	24.0-24.25	Q-6-24.0-24.25	07/06/01	73		13	86	< 2.0	0.52			
" " "	" " "	" " "	" " "	" " "	191.90	" " "	24.5-24.75	Q-6-24.5-24.75	07/06/01	130		< 10	130	4.0	0.91			
" " "	" " "	" " "	" " "	" " "	NA	" " "	25.25-25.5	Q-6-25.25-25.5	07/06/01	< 10		< 10	--	< 0.050	< 0.010			
CPT-89	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	63.93	NA							--				
CPT-90	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	63.03	NA							--				
CPT-91	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.61	NA							--				
CPT-92	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.26	NA							--				
CPT-93	06/19/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.02	NA							--				
CPT-94	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.70	NA							--				
CPT-95	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.16	NA							--				
CPT-96	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	60.74	NA							--				

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	TPHg (C6-C12)	TPHd (C13 - C22)	EFH (C13 - C40)	Petroleum Hydrocarbons (C6 - C40)	Benzene	Methyl-tert-butyl Ether (MTBE)	Notes
										EPA 8015M mg/kg	EPA 8015M mg/kg	EPA 8015M mg/kg	EPA 8260B mg/kg	EPA 8260B mg/kg		
CPT-97	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	60.20	NA						--			
CPT-98	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.17	NA						--			
CPT-99	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.16	NA						--			
CPT-100	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.33	NA						--			
CPT-101	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.63	NA						--			
CPT-102	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.15	NA						--			
CPT-103	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	60.80	NA						--			
CPT-104	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	60.90	NA						--			
CPT-105	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.31	NA						--			
CPT-106	06/20/01	Off-Site (Stadium Parking Lot)	NA	NA	NA	60.17	NA						--			
CPT-107	06/20/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.44	NA						--			
CPT-108	06/20/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.35	NA						--			
CPT-109	06/20/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.43	NA						--			
CPT-110	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.31	NA						--			
CPT-111	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.79	NA						--			
CPT-112	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	67.97	NA						--			
CPT-113	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	67.27	NA						--			
CPT-114	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.89	NA						--			
CPT-115	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.92	NA						--			
CPT-116	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	69.07	NA						--			
CPT-117	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	69.18	NA						--			
CPT-118	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	69.17	NA						--			
CPT-119	06/21/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.96	NA						--			
CPT-120	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.97	NA						--			
CPT-121	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	69.21	NA						--			
CPT-122	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	69.35	NA						--			
CPT-123	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.93	NA						--			
CPT-124	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	69.00	NA						--			
CPT-125	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.70	NA						--			
CPT-126	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.39	6.0-6.5	T2_7/8/99_(6-6)	07/08/99	930	5500		930	0	0	Not used due to no EFH analysis
CPT-127	06/25/01	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	68.38	6.0-6.5	T2_7/8/99_(6-6)	07/08/99	930	5500		930	0	0	Not used due to no EFH analysis
LFCPT-01	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.23	NA						--			
LFCPT-02	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.62	NA						--			
LFCPT-03	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.21	NA						--			
LFCPT-04	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.21	NA						--			
LFCPT-05	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.90	NA						--			
LFCPT-06	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.58	NA						--			
LFCPT-07	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.16	NA						--			
LFCPT-08	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	65.31	NA						--			

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	EPA 8015M mg/kg	EPA 8015M mg/kg	TPHg (C6-C12) mg/kg	TPHd (C13 - C22) mg/kg	EFH (C13 - C40) mg/kg	Petroleum Hydrocarbons (C6 - C40) mg/kg	Benzene mg/kg	Methyl-tert-butyl Ether (MTBE) mg/kg	Notes
LFCPT-09	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.70	NA							--				
LFCPT-10	12/16/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.30	NA						--					
LFCPT-11	12/17/02	Off-Site (Stadium Parking Lot)	2.89	1.00	0.43	65.42	19.5-20.0	AS-01-19.5	02/03/03	4500	740	740	5240	81	<25			
"	"	"	"	1.00	0.48	"	22.0-22.5	AS-01-22	02/03/03	2800	310	320	3120	26	<5.0			
"	"	"	"	1.00	0.43	"	26.5-27.0	AS-01-26.5	02/03/03	29	33	38	67	0.91	1.5			
"	"	"	"	1.00	0.39	"	28.0-28.5	AS-01-28	02/03/03	4.9	<5.0	<5.0	4.9	1.5	1.6			
LFCPT-12	12/17/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.96	NA						--					
LFCPT-13	12/17/02	Off-Site (Stadium Parking Lot)	NA	NA	NA	64.52	NA						--					
LFCPT-14	12/17/02	Off-Site (Stadium Parking Lot)	1.43	1.00	0.37	64.92	14.5-15.0	ASM-10-14.5	02/05/03	<1.0	5.8	5.8	5.8	0.0084	0.11			
"	"	"	"	1.00	0.38	"	16.0-16.5	ASM-10-16	02/05/03	1600	120	120	1720	4.8	<2.5			
"	"	"	"	1.00	0.70	"	19.0-19.5	ASM-10-19	02/05/03	4200	340	340	4540	26	2.9			
"	"	"	"	1.00	45.72	"	24.5-25.0	ASM-10-24.5	02/05/03	2.0	<5.0	<5.0	2.0	4.3	6.1			
"	"	"	"	1.00	NA	"	28.0-28.5	ASM-10-28	02/05/03	<1.0	<5.0	<5.0	--	0.12	0.026			
LFCPT-15	12/17/02	Off-Site (Stadium Parking Lot)	5.04	1.00	0.37	65.28	15.5-16.0	ASM-05-15.5	02/04/03	1.5	<5.0	<5.0	1.5	0.071	0.026			
"	"	"	"	1.00	0.44	"	18.0-18.5	ASM-05-18	02/04/03	1.9	16	240	241.9	0.90	1.0			
"	"	"	"	1.00	0.72	"	20.0-20.5	ASM-05-20	02/04/03	1700	110	110	1810	21	9.5			
"	"	"	"	1.00	0.76	"	21.0-21.5	ASM-05-21	02/04/03	4900	330	330	5230	48	<12			
"	"	"	5.27	1.00	0.37	"	15.5-16.0	ASM-08-15.5	02/05/03	2.6	<5.0	<5.0	2.6	0.056	0.67			
"	"	"	"	1.00	0.44	"	18.0-18.5	ASM-08-18	02/05/03	2800	390	400	3200	32	<12			
"	"	"	"	1.00	0.64	"	19.5-20.0	ASM-08-19.5	02/05/03	7100	580	580	7680	47	<12			
"	"	"	"	1.00	0.78	"	21.0-21.5	ASM-08-21	02/05/03	6700	530	530	7230	74	<12			
LFCPT-16	12/17/02	Off-Site (Stadium Parking Lot)	2.17	1.00	0.39	65.97	15.5-16.0	ASM-01-15.5	02/03/03	6.9	7.9	56	62.9	0.80	2.68			
"	"	"	"	1.00	0.41	"	17.0-17.5	ASM-01-17	02/03/03	4.8	14	16	20.8	1.4	3.5			
"	"	"	"	1.00	0.66	"	19.5-20.0	ASM-01-19.5	02/03/03	2400	270	280	2680	44	<5.0			
"	"	"	"	1.00	0.80	"	20.0-20.5	ASM-01-20	02/03/03	2900	330	340	3240	22	<5.0			
"	"	"	"	1.00	8.31	"	25.0-25.5	ASM-01-25	02/03/03	2.8	<5	<5	2.8	0.49	3.2			
LFCPT-17	07/14/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	59.08	NA						--					
LFCPT-18	07/14/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	58.01	NA						--					
LFCPT-19	07/14/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	57.12	NA						--					
LFCPT-20	07/14/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	59.74	16.0-16.5	LFCPT-20-16.0'	07/16/03	<1	<5	<5	--	0.035	0.044			
LFCPT-21	07/14/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	58.97	NA						--					
LFCPT-22	07/14/03	Off-Site (Stadium Parking Lot)	< 1.5	1.00	68.64	60.32	18.5-19.0	LFCPT-22-18.5'	07/16/03	15,000	740	750	15750	220	<25			
LFCPT-23	07/14/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	63.21	NA						--					
LFCPT-24	07/15/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	63.68	NA						--					
LFCPT-25	07/15/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.57	NA						--					
LFCPT-26	07/15/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	61.99	NA						--					
LFCPT-27	07/15/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	62.92	NA						--					
LFCPT-28	09/03/03	Off-Site (Friars Road)	NA	NA	NA	77.30	NA						--					
LFCPT-29	09/23/03	Off-Site (Friars Road)	NA	NA	NA	80.18	NA						--					

Table C-1
Summary of CPT/LIF Data and Corresponding Analytical Data
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

CPT/LIF Location ID	Date Sampled	General Location	Distance Between CPT and Soil Sampling Location (ft)	LIF Response Thickness (ft.)	Average LIF Response (% of Standard)	Ground Surface (Elev.: ft-msl)	Depth of Sampling Interval (Depth: ft-bgs)	Confirmation or Other Soil Sample ID	Date Sampled	EPA 8015M mg/kg	EPA 8015M mg/kg	TPHg (C6-C12) mg/kg	TPHd (C13-C22) mg/kg	EFH (C13-C40) mg/kg	Petroleum Hydrocarbons (C6-C40) mg/kg	Benzene mg/kg	Methyl-tert-butyl Ether (MTBE) mg/kg	Notes
LFCPT-30	07/15/03	Refusal	NA	NA	NA	84.17	NA							--				
LFCPT-31	07/15/03	Refusal	NA	NA	NA	87.28	NA							--				
LFCPT-32	07/15/03	On-Site (Lower Terminal Road/Shell Bldg)	NA	NA	NA	66.70	NA							--				
LFCPT-33	07/15/03	Off-Site (Stadium Parking Lot)	< 1.5	1.00	3.59	59.87	17.0-17.5	LFCPT-33-17.0'	07/16/03	1,900	230	240	2140	12	<10			
LFCPT-34	07/15/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	59.30	NA							--				
LFCPT-35	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	58.49	NA							--				
LFCPT-36	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	57.80	NA							--				
LFCPT-37	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	57.47	NA							--				
LFCPT-38	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	56.70	NA							--				
LFCPT-39	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	56.86	NA							--				
LFCPT-40	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	56.65	NA							--				
LFCPT-41	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	58.08	NA							--				
LFCPT-42	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	58.85	NA							--				
LFCPT-43	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	60.10	NA							--				
LFCPT-44	07/16/03	Off-Site (Stadium Parking Lot)	NA	NA	NA	57.45	NA							--				
LFCPT-45	09/03/03	Off-Site (San Diego Mission Road)	NA	NA	NA	70.71	NA							--				
LFCPT-46	09/03/03	Off-Site (San Diego Mission Road)	NA	NA	NA	71.96	NA							--				
LFCPT-47	09/04/03	On-Site (Manifold & SFPP Tank Farm)	2.33	1.00	5.13	72.67	8.5-9.0	R-54-8.5'	09/30/03	3,300	320	340	3640	23	3.7			
"	"	"	"	1.00	8.19	"	10.0-10.5	R-54-10.0'	09/30/03	4,000	200	210	4210	25	6.6			
"	"	"	"	1.00	6.38	"	11.0-11.5	R-54-11.0'	09/30/03	2,300	46	48	2348	14	5.3			
"	"	"	"	1.00	0.98	"	12.0-12.5	R-54-12.0'	09/30/03	2,100	43	65	2165	15	4.1			
"	"	"	"	1.00	1.73	"	14.5-15.0	R-54-14.5'	09/30/03	21	<5	<5	21	0.52	1.2			
LFCPT-48	09/04/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	72.80	NA							--				
LFCPT-49	09/04/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.79	NA							--				
LFCPT-50	09/22/03	On-Site (Manifold & SFPP Tank Farm)	< 1.5	1.00	1.20	72.48	11.5-12.0	LFCPT-50-11.5'	09/23/03	1,500	37	38	1538	6.7	<1			
"	"	"	"	1.00	2.01	"	12.0-12.5	LFCPT-50-12.0'	09/23/03	34	6.0	6.8	40.8	0.14	0.35			
LFCPT-51	09/22/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	74.14	NA							--				
LFCPT-52	09/22/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	76.66	NA							--				
LFCPT-53	09/22/03	On-Site (Manifold & SFPP Tank Farm)	7.13	1.00	28.61	73.66	11.5-12.0	R-56-11.5'	10/01/03	7,100	<5	11	7111	8.7	<5			
"	"	"	"	1.00	12.94	"	13.0-13.5	R-56-13.0'	10/01/03	460	27	36	496	1.2	<1.2			
"	"	"	"	1.00	3.58	"	14.5-15.0	R-56-14.5'	10/01/03	2,200	120	130	2330	1.7	<1.2			
LFCPT-54	09/22/03	On-Site (Manifold & SFPP Tank Farm)	< 1.5	1.00	0.33	73.61	12.0-12.5	LFCPT-54-12'	09/24/03	480	25	27	507	0.025	0.015			
"	"	"	"	NA	NA	"	13.5-14.0	LFCPT-54-13.5'	09/24/03	<1	<5	<5	--	<0.002	<0.005			
LFCPT-55	09/22/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.09	NA							--				
LFCPT-56	09/23/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	74.21	17.0-17.5	R-55-17'	09/30/03	870	91	96	966	1.9	<0.5			
LFCPT-57	09/23/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.13	NA							--				
LFCPT-58	09/23/03	On-Site (Manifold & SFPP Tank Farm)	NA	NA	NA	73.04	NA							--				

Source: CPT-01 through CPT-127 from "Site Investigation Report, Mission Valley Terminal", Aqui-ver, Inc. and

GeoSyntec Consultants, Inc., July 31, 2001.

NA - Not Analyzed

Table C-2
Correlation Factor Analysis
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

Location	Bulk Density (g/cc)	Porosity	Residual Saturation	LNAPL Density (g/cc)	LNAPL Concentration at Full Saturation (mg/kg)	Max LIF Reading (% of Standard)	Correlation Factor	Fitted Correlation Factor	Standard Error
R-49AS	1.81	0.319	0.33	0.73	86,200	456	189		
R-50AS	1.56	0.408	0.46	0.73	103,098	402	256		
R-51AS	1.57	0.407	0.56	0.73	83,266	225	370		
R-52AS	1.67	0.366	0.77	0.73	36,797	186	198		
R-53AS	1.67	0.367	0.83	0.73	27,272	240	114		
R-54AS	1.64	0.378	0.81	0.73	31,969	142	225		
								220.5	28.9

Table C-3
Mass and Volume Estimate
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

Sub-Area Location ID	Lithology	LIF Response CPT Point	CPT Point Average LIF Reading (% of Standard)	CPT Point Concentration mg/kg	97.5% U.C.L. ¹ CPT Point Concentration mg/kg	CPT Point LIF Response Thickness for the Zone Indicated ft	Average Concentration for the Zone Indicated mg/kg	97.5% U.C.L. ¹ Concentration for the Zone Indicated mg/kg	Average LIF Response Thickness for the Zone Indicated ft	LIF Response Area ft ²	LIF Response Volume ft ³	Soil Density (g/cc)	Mass of Soil in LIF Response lb	Mass of Soil in LIF Response kg	Average Mass of Residual LNAPL in LIF Response Volume	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Mass of Residual LNAPL in LIF Response Volume	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Benzene Fraction of MTBE	97.5% U.C.L. ¹ Mass Fraction of Benzene	Average Mass	97.5% U.C.L. ¹ Mass Fraction of MTBE	Average Mass of Benzene in LIF Response	97.5% U.C.L. ¹ Mass of Benzene in LIF Response Volume	Average Mass of MTBE in LIF Response	97.5% U.C.L. ¹ Mass of MTBE in LIF Response			
01	Vadose Zone-Silty Sands	--	--	--	--	2209.7	2788.9	0.49	--	--	--	--	1,174,466	532,729	1	1	3	3	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	Vadose Zone-Clayey Silts	--	--	--	--	1461.2	1844.3	1.03	1461.2	1844.3	1.03	24,300	25,029	1,60	99.89	2,500,026	1,133,994	1,657	2,091	3,653	4,611	0.00782	0.00211	0.01003	0.00302	29	46	8	14
	Vadose Zone-Well Graded Sands	--	--	--	--	423.4	534.3	0.50	423.4	534.3	0.50	24,300	12,150	1.54	96.14	1,168,095	529,839	224	283	495	624	0.00782	0.00211	0.01003	0.00302	4	6	1	2
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	0.0	0.0	0.00	24,300	0	1.58	98.64	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	Saturated Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	0.0	0.0	0.00	24,300	0	1.60	99.89	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	Saturated Zone-Well Graded Sands	--	--	--	--	89.3	112.7	0.53	24,300	12,879	1.54	96.14	1,238,180	561,630	50	63	111	140	0.00782	0.00211	0.01003	0.00302	1	1	0	0			
	LFCPT-45	0.4	89.3	112.7	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-88	136.5	30089.6	37976.7	3.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Clayey Silts	--	--	--	--	39770.4	50195.0	1.28	39770.4	50195.0	1.28	12,150	15,552	1.60	99.89	1,553,414	704,618	28,023	35,368	61,780	77,974	0.00782	0.00211	0.01003	0.00302	483	782	130	235
	CPT-88	180.4	39770.4	50195.0	1.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
02	Vadose Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	0.0	0.0	0.00	12,150	0	1.58	98.64	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	CPT-88	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	CPT-88	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	CPT-88	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
03	Vadose Zone-Silty Sands	--	--	--	--	4280.6	5402.6	2.00	24,300	48,600	1.58	98.64	4,793,739	2,174,406	9,308	11,747	20,520	25,899	0.00782	0.00211	0.01003	0.00302	160	260	43	78			
	CPT-84	15.4	3392.3	4281.5	3.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-85	42.3	9337.4	11784.9	2.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-86	0.5	112.0	141.4	0.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Clayey Silts	--	--	--	--	9036.9	11405.6	4.41	24,300	107,082	1.60	99.89	10,695,903	4,851,586	43,843	55,335	96,658	121,993	0.00782	0.00211	0.01003	0.00302	756	1,224	204	368			
	CPT-84	74.1	16337.1	20619.4	3.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-85	18.5	4076.5	5145.1	2.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-86	30.4	6697.0	8452.4	6.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Well Graded Sands	--	--	--	--	719.7	908.3	0.04	24,300	1,053	1.54	96.14	101,235	45,919	33	42	73	92	0.00782	0.00211	0.01003	0.00302	1	1	0	0			
	CPT-84	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-85	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-86	9.8	2159.0	2724.9	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	24,300	0	1.58	98.64	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	CPT-84	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	CPT-85	0.0	0.0	0.0	0.00																								

Table C-3
Mass and Volume Estimate
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

Sub-Area Location ID	Lithology	LIF Response CPT Point	CPT Point Average LIF Reading (% of Standard)	CPT Point Concentration mg/kg	97.5% U.C.L. ¹ CPT Point Concentration mg/kg	CPT Point LIF Response Thickness for the Zone Indicated ft	Average Concentration for the Zone Indicated mg/kg	97.5% U.C.L. ¹ Concentration for the Zone Indicated mg/kg	Average LIF Response Thickness for the Zone Indicated ft	LIF Response Area ft ²	LIF Response Volume ft ³	Soil Density (g/cc)	Mass of Soil in LIF Response lb	Mass of Soil in LIF Response Volume kg	Average Mass of Residual LNAPL in LIF Response Volume (lb/ft ³)	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Mass of Residual LNAPL in LIF Response Volume kg	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Benzene Fraction of MTBE	97.5% U.C.L. ¹ Mass Fraction of Benzene	Average Mass	97.5% U.C.L. ¹ Mass Fraction of MTBE	Average Mass of Benzene in LIF Response lb	97.5% U.C.L. ¹ Mass of Benzene in LIF Response Volume lb	Mass of MTBE in LIF Response lb	97.5% U.C.L. ¹ Mass of MTBE in LIF Response Volume lb	
06	Vadose Zone-Silty Sands	--	--	--	--	--	11184.2	14115.8	3.76	18,225	68,435	1.58	98.64	6,750,183	3,061,835	34,244	43,220	75,495	95,284	0.00782	0.00211	0.01003	0.00302	590	956	159	288
		CPT-80	14.7	3247.4	4098.6	3.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		CPT-81	86.7	19121.0	24133.0	4.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Vadose Zone-Clayey Silts	--	--	--	--	--	304.2	383.9	0.77	18,225	14,033	1.60	99.89	1,401,713	635,807	193	244	426	538	0.00782	0.00211	0.01003	0.00302	3	5	1	2
		CPT-80	2.8	608.4	767.9	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Vadose Zone-Well Graded Sands	CPT-81	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		CPT-80	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Saturated Zone-Silty Sands	CPT-81	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.0	0.0	0.0	0.00	18,225	0	1.58	98.64	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
		CPT-80	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Saturated Zone-Clayey Silts	CPT-81	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.0	0.0	0.0	0.00	18,225	0	1.60	99.89	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
		CPT-80	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Saturated Zone-Well Graded Sands	CPT-81	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.0	0.0	0.0	0.00	18,225	0	1.54	96.14	0	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0
		CPT-80	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
07	Vadose Zone-Silty Sands	CPT-81	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	1238.0	1562.5	0.75	24,300	18,185	1.58	98.64	1,793,657	813,590	1,007	1,271	2,221	2,803	0.00782	0.00211	0.01003	0.00302	17	28	5	8	
		LFCPT-8	1.3	296.9	374.7	2.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-11	5.2	1138.6	1437.0	0.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-12	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-14	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-15	27.2	5992.4	7563.2	1.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-16	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Vadose Zone-Clayey Silts	--	--	--	--	1842.5	2325.5	0.44	24,300	10,733	1.60	99.89	1,072,017	486,260	896	1,131	1,975	2,493	0.00782	0.00211	0.01003	0.00302	15	25	4	8	
		LFCPT-8	0.7	147.5	186.2	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-11	0.8	179.9	227.1	0.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-12	1.0	216.7	273.5	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-14	19.7	4346.2	5485.4	0.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-15	21.4	4707.6	5941.6	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-16	6.6	1457.3	1839.3	0.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Vadose Zone-Well Graded Sands	--	--	--	--	1101.8	1390.6	0.15	24,300	3,605	1.54	96.14	346,535	157,186	173	219	382	482	0.00782	0.00211	0.01003	0.00302	3	5	1	1	
		LFCPT-8	6.8	1509.3	1904.9	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		LFCPT-11	0.0	0.0																							

Table C-3
Mass and Volume Estimate
 Mission Valley Terminal, San Diego, CA
 LER 002-10180-13

Sub-Area Location ID	Lithology	CPT Point LIF Response CPT Point	Average LIF Reading (% of Standard)	CPT Point Average Concentration mg/kg	CPT Point 97.5% U.C.L. ¹ Concentration mg/kg	CPT Point LIF Response Thickness for the Zone Indicated ft	Average Concentration for the Zone Indicated mg/kg	97.5% U.C.L. ¹ Concentration for the Zone Indicated mg/kg	Average LIF Response Thickness for the Zone Indicated ft	LIF Response Area ft ²	LIF Response Volume ft ³	Soil Density (g/cc)	Soil Density (lb/ft ³)	Mass of Soil in LIF Response Volume lb	Mass of Soil in LIF Response Volume kg	Average Mass of Residual LNAPL in LIF Response Volume kg	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Mass of Residual LNAPL in LIF Response Volume lb	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume lb	Average Mass Fraction of Benzene	Average Mass	97.5% U.C.L. ¹ Mass Fraction of Benzene	97.5% U.C.L. ¹ Mass Fraction of MTBE	Average Mass of Benzene in LIF Response Volume lb	97.5% U.C.L. ¹ Mass of Benzene in LIF Response Volume lb	Average Mass of MTBE in LIF Response Volume lb	97.5% U.C.L. ¹ Mass of MTBE in LIF Response Volume lb
09	Vadose Zone-Silty Sands	--	--	--	2842.2	3587.2	3.69	12,150	44,874	1.58	98.64	4,426,219	2,007,701	5,706	7,202	12,580	15,678	0.00782	0.00211	0.01003	0.00302	98	159	27	48		
		CPT-89	8.9	1969.2	2485.3	5.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-90	1.6	355.2	448.3	4.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-91	28.1	6202.3	7828.1	2.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-89	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-90	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-89	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-90	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.58	98.64	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-89	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-90	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-89	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-91	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-89	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-90	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Silty Sands	--	--	--	--	4313.2	5443.7	2.02	12,150	24,543	1.58	98.64	2,420,838	1,098,075	4,736	5,978	10,441	13,178	0.00782	0.00211	0.01003	0.00302	82	132	22	40	
		CPT-92	41.7	9191.8	11601.2	2.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-93	8.2	1801.2	2273.3	2.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-92	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-93	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-92	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-93	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.58	98.64	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-92	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-93	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-92	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-93	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-92	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-93	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Silty Sands	--	--	--	--	3128.2	3948.1	2.97	12,150	36,086	1.58	98.64	3,559,351	1,614,496	5,050	6,374	11,134	14,053	0.00782	0.00211	0.01003	0.00302	87	141	23	42	
		CPT-94	8.8	1946.4	2456.6	2.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-95	19.5	4309.9	5439.6	3.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-94	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-95	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Vadose Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
		CPT-94	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		CPT-95	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Saturated Zone-Silty Sands	--	--</td																								

Table C-3
Mass and Volume Estimate
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

Sub-Area Location ID	Lithology	LIF Response CPT Point	CPT Point Average LIF Reading (% of Standard)	CPT Point Concentration mg/kg	97.5% U.C.L. ¹ CPT Point Concentration mg/kg	CPT Point LIF Response Thickness for the Zone Indicated ft	Average Concentration for the Zone Indicated mg/kg	97.5% U.C.L. ¹ Concentration for the Zone Indicated mg/kg	Average LIF Response Thickness for the Zone Indicated ft	LIF Response Area ft ²	LIF Response Volume ft ³	Soil Density (g/cc)	Mass of Soil in LIF Response lb	Mass of Soil in LIF Response kg	Average Mass of Residual LNAPL in LIF Response Volume	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Mass of Residual LNAPL in LIF Response Volume	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume kg	Average Benzene Fraction of MTBE	97.5% U.C.L. ¹ Mass Fraction of Benzene	Average Mass	97.5% U.C.L. ¹ Mass Fraction of MTBE	Average Mass of Benzene in LIF Response lb	97.5% U.C.L. ¹ Mass of Benzene in LIF Response Volume	Average Mass of MTBE in LIF Response lb	97.5% U.C.L. ¹ Mass of MTBE in LIF Response		
13	Vadose Zone-Silty Sands	--	--	--	54.4	68.6	1.54	--	--	12,150	18,711	1.58	98.64	1,845,589	837,146	46	57	100	127	0.00782	0.00211	0.01003	0.00302	1	1	0	0	
	Vadose Zone-Clayey Silts	--	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	--	--	--	--	--	--	--	--		
	Vadose Zone-Well Graded Sands	--	--	--	--	2220.7	2802.8	4.99	--	--	12,150	60,629	1.54	96.14	5,628,792	2,643,899	5,871	7,410	12,944	16,337	0.00782	0.00211	0.01003	0.00302	101	164	27	49
	Saturated Zone-Silty Sands	--	--	--	--	--	0.0	0.0	0.00	12,150	0	1.58	98.64	0	0	0	0	0	--	--	0.00782	0.00211	0.01003	0.00302	0	0	0	0
	Saturated Zone-Clayey Silts	--	--	--	--	--	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Well Graded Sands	--	--	--	--	13820.1	17442.6	1.50	12,150	18,225	1.54	96.14	1,752,142	794,759	10,984	13,863	24,215	30,562	0.00782	0.00211	0.01003	0.00302	189	307	51	92		
	LFCPT-22	0.2	54.4	68.6	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	LFCPT-22	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	LFCPT-22	10.1	2220.7	2802.8	4.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	LFCPT-22	62.7	13820.1	17442.6	1.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
14	Vadose Zone-Silty Sands	--	--	--	--	289.9	365.9	5.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Clayey Silts	--	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
	LFCPT-33	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Well Graded Sands	--	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0		
	LFCPT-33	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.58	98.64	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	LFCPT-33	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	Saturated Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
15	Vadose Zone-Silty Sands	--	--	--	--	16660.4	21027.5	3.02	12,150	36,693	1.58	98.64	3,619,273	1,641,676	27,351	34,520	60,299	76,104	0.00782	0.00211	0.01003	0.00302	472	763	127	230		
	CPT-74	75.6	16660.4	21027.5	3.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	12,150	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	CPT-74	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	CPT-74	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	12,150	0	1.58	98.64	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
16	CPT-74	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Silty Sands	--	--	--	--	498.0	628.5	2.97	6,075	18,043	1.58	98.64	1,779,675	807,248	402	507	886	1,119	0.00782	0.00211	0.01003	0.00302	7	11	2	3		
	LFCPT-21	2.3	498.0	628.5	2.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Clayey Silts	--	--	--	--	0.0	0.0	0.00	6,075	0	1.60	99.89	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	LFCPT-21	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Vadose Zone-Well Graded Sands	--	--	--	--	0.0	0.0	0.00	6,075	0	1.54	96.14	0	0	0	0	0	0.00782	0.00211	0.01003	0.00302	0	0	0	0			
	LFCPT-21	0.0	0.0	0.0	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	Saturated Zone-Silty Sands	--	--	--	--	0.0	0.0	0.00	6,075	0	1.58	98.64	0															

Table C-4
Mass and Volume Estimate for Numerical Simulation
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

	Area ft ²	Average Thickness ft	Soil Mass		Average Mass of Residual LNAPL in LIF Response Volume	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume	Average Mass of Residual LNAPL in LIF Response Volume	97.5% U.C.L. ¹ Mass of Residual LNAPL in LIF Response Volume
			kg	lb				
Impacted Soil Above Water Table	157,950							
Vadose Zone-Silty Sands		3.41	52,474,459	23,802,042	177,638	224,201	391,625	494,277
Vadose Zone-Clayey Silts		0.28	5,418,745	2,457,904	30,909	39,011	68,142	86,004
Vadose Zone-Well Graded Sands		0.00	0	0	0	0	0	0
Water Table In Well Graded Sand	42,525							
Vadose Zone-Silty Sands		1.52	4,536,075	2,057,531	410	517	903	1,140
Vadose Zone-Clayey Silts		0.34	2,500,026	1,133,994	1,657	2,091	3,653	4,611
Vadose Zone-Well Graded Sands		2.47	8,124,097	3,685,033	6,280	7,926	13,845	17,474
Saturated Zone-Well Graded Sands		0.86	3,305,707	1,499,445	11,037	13,929	24,331	30,709
Water Table In Clayey Silt	54,675							
Vadose Zone-Silty Sands		2.16	8,819,480	4,000,454	10,547	13,311	23,251	29,346
Vadose Zone-Clayey Silts		2.08	12,614,409	5,721,807	45,076	56,892	99,376	125,424
Saturated Zone-Clayey Silts		0.45	2,402,937	1,089,955	812	1,025	1,790	2,259
Saturated Zone-Well Graded Sands		0.59	2,530,871	1,147,985	1,632	2,060	3,599	4,542

1 - Upper Confidence Limit

Table C-5
Mass Fraction Analysis
Mission Valley Terminal, San Diego, CA
LFR 002-10180-13

General Location	Sample ID	Date Sampled	TPHg (C6-C12) EPA 8015M	TPHd (C13 - C22) EPA 8015M	EFH (C13 - C40) EPA 8015M	Petroleum Hydrocarbons (C6 - C40) EPA 8015M	Benzene EPA 8260B	Methyl-tert-butyl Ether (MTBE) EPA 8260B	Mass Fraction of Benzene	Mass Fraction of MTBE
Off-Site (Stadium Parking Lot)	Q-3-12.25-12.5	07/06/01	230		1800	2030	1.0	0.20	0.00049	0.00010
"	Q-3-12.75-13.0	07/06/01	360		2700	3060	2.0	0.40	0.00065	0.00013
"	Q-4-12.25-12.5	07/06/01	10		10	20	0.025	0.005		
"	Q-4-12.75-13.0	07/06/01	250		1200	1450	1.0	0.20	0.00069	0.00014
"	Q-4-13.25-13.5	07/06/01	11		1400	1411	0.05	0.023	0.00004	0.00002
"	Q-4-13.75-14.0	07/06/01	590		3400	3990	4.0	0.8	0.00100	0.00020
"	Q-4-14.25-14.5	07/06/01	23		200	223	0.10	0.020		
Off-Site (Stadium Parking Lot)	Q-5-17.0-17.25	07/06/01	95		40	135	1.0	0.20		
"	Q-5-17.5-17.75	07/06/01	8000		4000	12000	50	25	0.00417	0.00208
"	Q-5-18.0-18.25	07/06/01	1300		520	1820	10	2.0	0.00549	0.00110
"	Q-5-18.5-18.75	07/06/01	1600		860	2460	20	8.9	0.00813	0.00362
"	Q-5-19.0-19.25	07/06/01	3400		190	3590	54	21	0.01504	0.00585
"	Q-5-19.5-19.75	07/06/01	940		46	986	23	9.7	0.02333	0.00984
"	Q-5-20.0-20.25	07/06/01	1100		180	1280	5	7.7	0.00391	0.00602
"	Q-5-20.5-20.75	07/06/01	6000		4000	10000	50	29	0.00500	0.00290
Off-Site (Stadium Parking Lot)	RW-3A-8	11/26/02	0	0	0	0.0092	0			
"	RW-3A-25	11/26/02	14	30	31	45	2.2	1.8		
Off-Site (Stadium Parking Lot)	Q-6-22.0-22.25	07/06/01	1200		80	1280	11	5.7	0.00859	0.00445
"	Q-6-22.5-22.75	07/06/01	710		98	808	10	2	0.01238	0.00248
"	Q-6-23.0-23.25	07/06/01	110		10	120	1.0	0.79		
"	Q-6-23.5-23.75	07/06/01	40		10	50	1.0	0.2		
"	Q-6-24.0-24.25	07/06/01	73		13	86	1.0	0.52		
"	Q-6-24.5-24.75	07/06/01	130		10	140	4.0	0.91		
"	Q-6-25.25-25.5	07/06/01	10		10	20	0.025	0.005		
Off-Site (Stadium Parking Lot)	AS-01-19.5	02/03/03	4500	740	740	5240	81	12.5	0.01546	0.00239
"	AS-01-22	02/03/03	2800	310	320	3120	26	2.5	0.00833	0.00080
"	AS-01-26.5	02/03/03	29	33	38	67	0.91	1.5		
"	AS-01-28	02/03/03	4.9	5	5	10	1.5	1.6		
Off-Site (Stadium Parking Lot)	ASM-10-14.5	02/05/03	1	5.8	5.8	7	0.0084	0.11		
"	ASM-10-16	02/05/03	1600	120	120	1720	4.8	1.25	0.00279	0.00073
"	ASM-10-19	02/05/03	4200	340	340	4540	26	2.9	0.00573	0.00064
"	ASM-10-24.5	02/05/03	2.0	5	5	7	4.3	6.1		
"	ASM-10-28	02/05/03	1	5	5	6	0.12	0.026		
Off-Site (Stadium Parking Lot)	ASM-05-15.5	02/04/03	1.5	5	5	7	0.071	0.026		
"	ASM-05-18	02/04/03	1.9	16	240	242	0.90	1.0		
"	ASM-05-20	02/04/03	1700	110	110	1810	21	9.5	0.01160	0.00525
"	ASM-05-21	02/04/03	4900	330	330	5230	48	6	0.00918	0.00115
"	ASM-08-15.5	02/05/03	2.6	5	5	8	0.056	0.335		
"	ASM-08-18	02/05/03	2800	390	400	3200	32	6	0.01000	0.00188
"	ASM-08-19.5	02/05/03	7100	580	580	7680	47	6	0.00612	0.00078
"	ASM-08-21	02/05/03	6700	530	530	7230	74	6	0.01024	0.00083
Off-Site (Stadium Parking Lot)	ASM-01-15.5	02/03/03	6.9	7.9	56	63	0.80	6		
"	ASM-01-17	02/03/03	4.8	14	16	21	1.4	3.5		
"	ASM-01-19.5	02/03/03	2400	270	280	2680	44	2.5	0.01642	0.00093
"	ASM-01-20	02/03/03	2900	330	340	3240	22	2.5	0.00679	0.00077
"	ASM-01-25	02/03/03	2.8	5	5	8	0.49	3.2		
Off-Site (Stadium Parking Lot)	LFCPT-20-16.0'	07/16/03	1	5	5	6	0.035	0.044		
Off-Site (Stadium Parking Lot)	LFCPT-22-18.5'	07/16/03	15,000	740	750	15750	220	12.5	0.01397	0.00079
Off-Site (Stadium Parking Lot)	LFCPT-33-17.0'	07/16/03	1,900	230	240	2140	12	2.5	0.00561	0.00117
							Benzene	MTBE		
							Average	0.00782	0.00211	
							Standard Deviation	0.00573	0.00236	
							Sample Size	27	27	
							Standard Error	0.00110	0.00045	
							97.5% U.C.L.	0.01003	0.00302	

Figure C-1
Average LIF Reading (% of Standard) vs. Soil Concentration of TPH (C_6-C_{40})
Mission Valley Terminal, San Diego, CA



